IN THE CLAIMS:

Please amend claim 50 as follows.

Claims 1-10 (Cancelled)

11. (Previously Presented) An output packet organizer, comprising:

a) n time slot locations wherein n is an integer, each of said n time slot locations to store one or more of its own packet identifiers, each of said packet identifiers having a corresponding packet, each of said packet identifiers indicating where its corresponding packet is waiting within a packet buffer; and,

b) a scheduler to service said n time slot locations according to a plurality of scheduling cycles, one of said n time slot locations to be serviced for each of said scheduling cycles, whichever of said n time slot locations to be serviced during a particular scheduling cycle determined by a round robin pointer, said round robin pointer having a temporal rotation period so as to cause said n time slot locations to correspond to n different queuing delays, a servicing of a said time slot location causing removal of said time slot location's one or more packet identifiers, said removal causing sending of a packet from said packet buffer for each of said time slot location's one or more packet identifiers that are said removed.

12. (Previously Presented) The output packet organizer of claim 11 wherein said temporal rotation period is configurable so as to allow said n different queuing delays to be configurable.

13. (Previously Presented) The output packet organizer of claim 11 further comprising a high priority location to store a high priority packet identifier that indicates where a high priority packet is waiting within said packet buffer, said high priority location coupled to said scheduler.

14. (Previously Presented) The output packet organizer of claim 13 further comprising a highest priority location to store highest priority packet identifiers that indicate where a highest priority packet is within said packet buffer, said highest priority location coupled to said scheduler, said highest priority packet having higher priority than said high priority packet.

15. (Previously Presented) The output packet organizer of claim 14 wherein said highest priority packet is a network maintenance packet and said high priority packet is a real time packet.

16. (Previously Presented) The output packet organizer of claim 15 wherein said n time slot locations store packet identifiers that identify packets are neither network maintenance packets nor real time packets.

17. (Previously Presented) The output packet organizer of claim 16 wherein

packets identified by packet identifiers that are stored within but not released from a pointed to time slot location are sent from said packet buffer prior to any packets identified by packet identifiers that are stored with the time slot location that, according to said round robin pointer, is to be next serviced after said pointed to time slot location.

18. (Previously Presented) The apparatus of claim 11 wherein packets identified by packet identifiers that are stored within but not released from a pointed to time slot location are sent from said packet buffer prior to any packets identified by packet identifiers that are stored with the time slot location that, according to said round robin pointer, is to be next serviced after said pointed to time slot location.

19. (Previously Presented) The output packet organizer of claim 11 wherein said scheduler services a pointed to time slot location only if said pointed to time slot location is storing a said packet identifier.

20. (Previously Presented) The output packet organizer of claim 19 further comprising a second location to store a lower priority packet identifier, said lower priority packet identifier indicating where a lower priority packet, that is waiting to be sent from said packet buffer, is located within said packet buffer, said lower priority packet having a lower priority than packets identified by packet identifiers stored within said n time slot locations, and wherein said second location can be serviced by said

scheduler only if a pointed to time slot location or higher priority location than said pointed to time slot location is empty when said scheduler looks to service said other pointed to time slot location or higher priority location than said pointed to time slot location.

21. (Canceled)

22. (Previously Presented) The output packet organizer of claim 11 wherein said scheduler is capable of servicing packet identifiers from one of said n time slot locations, per said scheduling cycle, such that a percentage of said an amount of packet data removable from said packet buffer as authorized by said scheduler per scheduling cycle can be removed from said packet buffer, in the form of packets identified by packet identifiers stored a time slot location, per said scheduling cycle.

23. (Previously Presented) The output packet organizer of claim 22 wherein said scheduler is capable of servicing high priority packet identifiers from a high priority location during said scheduling cycle, to the extent they represent an amount of high priority packet data greater than a second percentage of said amount of packet data, at the expense of packet identifiers stored within the time slot location pointed to by said round robin pointer to be serviced for said scheduling cycle.

24. (Previously Presented) The output packet organizer of claim 23 wherein packet identifiers that were left un-serviced as a result of said servicing of said high priority packet identifiers that represented high priority packet data beyond said second percentage will be serviced by said scheduler during a next scheduling cycle that follows said scheduling cycle.

25. (Previously Presented) The output packet organizer of claim 11 wherein a weighted fair queue is capable of being built into said n elastic time slots by establishing a first quantitative flow having a higher output rate than a second quantitative flow.

26. (Previously Presented) The output packet organizer of claim 11 wherein a first plurality of different users are capable of being assigned to said first quantitative flow and a second plurality of different users are capable of being assigned to said second quantitative flow.

27. (Previously Presented) A method, comprising:

servicing n time slot locations according to a plurality of scheduling cycles whichever of said n time slot locations to be serviced during a particular scheduling cycle determined by a round robin pointer, said round robin pointer having a temporal rotation period so as to cause said n time slot locations to correspond to n different queuing delays, said servicing of said n time slot locations causing removal of at least one packet

identifier stored therein, said removal causing sending of a packet identified by said packet identifier from a packet buffer.

28. (Previously Presented) The method of claim 27 wherein said round robin pointer has a configurable rotation time so as to cause each of said queuing delays to be configurable.

29. (Previously Presented) The method of claim 27 further comprising, for each scheduling cycle of said plurality of scheduling cycles, servicing a high priority packet identifier from a high priority location, said high priority packet having higher priority than any packet stored within said n time slot locations.

30. (Previously Presented) The method of claim 29 wherein each of said high priority packet identifiers identify a packet that carries real time traffic.

31. (Previously Presented) The method of claim 30 wherein those packet identifiers that are stored within said n time slot locations each identify a packet that carries data traffic.

32. (Previously Presented) The method of claim 31 further comprising, for each scheduling cycle of said plurality of scheduling cycles, servicing a higher priority packet

identifier from a higher priority location, said higher priority packet higher in priority than said high priority packet.

33. (Canceled)

34. (Previously Presented) The method of claim 32 wherein said higher priority packet carries network maintenance traffic.

35. (Previously Presented) The method of claim 27 further comprising said scheduler allowing a best effort location to release one or more packet identifiers during a scheduling cycle as a consequence of said scheduling cycle's pointed to time slot location having only stored packet identifiers that correspond to less than an amount of packet data per scheduling cycle that may be released from a pointed to time slot location per scheduling cycle.

36. (Previously Presented) The method of claim35 wherein said best effort location stores a packet identifier whose corresponding packet represents traffic in excess of an allocated rate.

37. (Previously Presented) The method of claim 27 wherein each of said scheduling cycles corresponds to an output rate defined by an amount of packet data sent

from said packet buffer per unit of time and wherein one or more high priority packet identifiers are configured to be serviced from a high priority location, per scheduling cycle, such that a first percentage of said amount of packet data is removed from said packet buffer in the form of high priority packets per scheduling cycle, where, said high priority packets are higher in priority than those packets identified by packet identifiers stored in said time slot locations.

38. (Previously Presented) The method of claim 37 wherein packet identifiers allowed to be serviced per scheduling cycle from a time slot location correspond to a second percentage of said amount of packet data.

39. (Previously Presented) The method of claim 38 further comprising servicing during a scheduling cycle high priority packet identifiers from said high priority location, and, to the extent they represent an amount of high priority packet data greater than said first percentage, servicing said high priority packet identifiers at the expense of packet identifiers stored within the time slot location pointed to for said scheduling cycle.

40. (Previously Presented) The method of claim 39 wherein packet identifiers that were left un-serviced after expiration of a scheduling cycle in which the time slot location they are stored in was pointed to are serviced during a next scheduling cycle relative to said scheduling cycle and before any of those packet identifiers stored in a next pointed

to location relative to said pointed to location.

41. (Previously Presented) The method of claim 27 wherein a weighted fair queue is built into said n time slots by establishing a first quantitative flow having a higher output rate than a second quantitative flow.

42. (Previously Presented) The output packet organizer of claim 41 wherein a first plurality of different users are assigned to said first quantitative flow and a second plurality of different users are assigned to said second quantitative flow.

43. (Previously Presented) An apparatus, comprising:

a) a packet buffer capable of storing packets; and,

b) an output packet organizer coupled to said packet buffer, said output packet organizer to organize and release packet identifiers that point to said packets, where, a said release of a packet identifier from said output packet organizer triggers said packet identifier's corresponding packet to be sent from said packet buffer toward an outbound networking line, said output packet organizer comprising:

1) n time slot locations to store packet identifiers that point to said packets, and, a round robin pointer to point to a time slot location to be serviced during a particular scheduling cycle, said round robin pointer having a temporal rotation period so as to cause said n time slot locations to correspond to n different queuing delays, and,

2) a scheduler to pace a plurality of scheduling cycles, said scheduling cycle being one of said scheduling cycles.

44. (Previously Presented) The apparatus of claim 43 wherein said packet buffer is also capable of storing higher priority packets having a priority higher than said packets.

45. (Previously Presented) The apparatus of claim 44 wherein said packets that are higher priority than said packets at least comprise network maintenance/control packets.

46. (Previously Presented) The apparatus of claim 44 wherein said output packet organizer further comprises at least one location to store said packet identifiers that each point to a different one of said higher priority packets, said at least one location coupled to said scheduler so as to be capable of releasing one or more of said higher priority packet identifiers for each of said plurality of scheduling cycles.

47. (Previously Presented) The apparatus of claim 46 wherein said first priority packets are real time packets and network maintenance/control packets.

48. (Previously Presented) The apparatus of claim 47 wherein said packets identified by packet identifiers stored within said n time slot locations are neither real

time packets nor network maintenance/control packets.

49. (Canceled)

50. (Currently Amended) The apparatus of claim ~~49~~ 43 wherein said scheduling cycles are organized into an amount of packet data sent from said packet buffer per unit of time and where said plurality of time slot locations and said pointer are capable of effectively causing a percentage worth of said amount of packet data of said packets to be sent from said packet buffer for each scheduling cycle of said plurality of scheduling cycles.

51. (Previously Presented) The apparatus of claim 50 wherein, one or more of said packet identifiers whose time slot location is pointed to during said particular scheduling cycle but are not released as a consequence are nevertheless released before packet identifiers whose time slot location is next pointed to.

52. (Canceled)

53. (Previously Presented) The apparatus of claim 52 wherein said pointer is a round robin pointer having a configurable rotation time, said plurality of time slot locations being a plurality of elastic time slots as a consequence of said configurable

rotation time.

54. (Previously Presented) The apparatus of claim 43 wherein a weighted fair queue is capable of being built into said time slot locations by establishing a first quantitative flow having a higher output rate than a second quantitative flow.

55. (Previously Presented) The output packet organizer of claim 54 wherein a first plurality of different users are capable of being assigned to said first quantitative flow and a second plurality of different users are capable of being assigned to said second quantitative flow.

56. (Previously Presented) The apparatus of claim 43 wherein said output packet organizer is coupled to a pipeline stage of a packet processing pipeline, said pipeline stage to at least store each of said packet identifiers into a said time slot location that corresponds to an appropriate queuing delay for its corresponding low priority packet, each of said appropriate queuing delays calculated within said pipeline, where, said pipeline stage is to recognize which time slot location corresponds to an appropriate delay based upon a data structure that is passed from said output packet organizer to said pipeline stage for each of said low priority packets.

57. (Previously Presented) The apparatus of claim 56 wherein said pipeline

further comprises the following pipeline stages for regulating traffic offered by a network to a first user of said network and a second user of said network, wherein, the following pipeline stages precede said pipeline stage in said pipeline:

a) a first pipeline stage comprising:

1) a first data bus to receive from a first memory:

(i) during a first pipeline cycle:

a first output flow identifier;

(ii) during a second pipeline cycle:

a second output flow identifier; and

b) a second pipeline stage that follows said first pipeline stage, said second pipeline stage comprising:

1) a second data bus to receive from a second memory:

(i) during said second pipeline cycle and from a location of said second memory pointed to by said first output flow identifier:

a first TOS parameter for a first of said low priority packets, said first low priority output packet destined for said first user;

(ii) during a third pipeline cycle and from a location of said second memory pointed to by said second output flow identifier:

a second TOS parameter for a second of said low priority packets, said second low priority packet destined for said

second user;

2) register space in which to store:

(iii) during said second pipeline cycle:

a first parameter from which a first of said delays can be calculated, said first delay for a first of said low priority packets, said first delay consistent with said first output flow;

(iv) during said third pipeline cycle:

a second parameter from which a second of said delays can be calculated, said second delay for a second of said low priority packets, said second delay consistent with said first output flow;

3) logic circuitry to calculate:

(v) during said second pipeline cycle:

said first delay;

(vi) during said third pipeline cycle;

said second delay.